



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/738,344	12/17/2003	Arianna T. Morales	GP-302303	9697

7590 09/26/2005

Kathryn A. Marra
300 Renaissance Center
Mail Code 482-C23-B21
P.O. Box 300
Detroit, MI 48265-3000

EXAMINER

ZIMMERMAN, JOHN J

ART UNIT	PAPER NUMBER
----------	--------------

1775

DATE MAILED: 09/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/738,344	Applicant(s) MORALES ET AL.	
	Examiner John J. Zimmerman	Art Unit 1775	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 June 2005.
 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 4-17 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) ☐ Claim(s) _____ is/are allowed.
 6) ☒ Claim(s) 1,2 and 4-17 is/are rejected.
 7) ☐ Claim(s) _____ is/are objected to.
 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
 10) ☒ The drawing(s) filed on 17 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

SECOND OFFICE ACTION

Amendments

1. This Second Office Action is in response to applicant's communication titled "AMENDMENT" received June 22, 2005. Claims 1-2 and 4-17 are pending in this application.

Double Patenting

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 1-2 and 4-17 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-18 of copending Application No. 10/738,345 in view of Rashid (U.S. Patent 6,253,588) and Seeliger (U.S. Patent 6,090,232). The pending claims differ from the claims of the copending application mainly in that the pending claims do not recite the die and platen apparatus used in the superplastic or

Art Unit: 1775

quick plastic forming processes and the copending claims do not recite manufacture of the foam core from a metal foam precursor. Regarding the recitation of die and platen apparatus, Rashid (e.g. Figure 2) clearly shows that quick plastic forming and superplastic forming operations conventionally are done in die and platen apparatuses. There is no patentable distinction between the sets of claims of the pending applications based on the mere recitation of conventional apparatuses necessary to perform the claimed quick plastic forming and superplastic forming method steps. Regarding the lack of recitation of a foam precursor in the claims of the copending application, Seelinger clearly shows that forming metallic foam core structures from foam precursor structures is an obvious step in the art when forming metallic foam core composite structures (e.g. see column 3, lines 13-17; Figure 2). As shown by Seelinger, there is no patentable distinction between the sets of claims of the copending application based on the formation of the metallic foam core from a precursor. This is a provisional obviousness-type double patenting rejection since the applications have yet been patented.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 1775

5. Claims 1-2 and 4-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Seeliger (U.S. Patent 6,090,232) in view of Baumeister (U.S. Patent 5,151,246) and further in view of Rashid (U.S. Patent 6,253,588).

6. Seeliger discloses a metal foam composite having a curvilinear shape (e.g. see column 3, lines 13-17; Figure 2). The foam metal can be made from a metal powder such as alloyed aluminum and light metal alloys (a term used in the metallurgical art to refer to alloys such as aluminum alloys) can be used for the solid metal sheets (e.g. see column 2, lines 14-20). The foam layer can be made by mixing the metal powder with a blowing agent (e.g. see column 2, lines 42-48) to form a foamable semi-finished product. Foam alloys of the types described would be expected to have metallic microphases (e.g. applicant's claim 8). Seeliger may not disclose details of the blowing agent composition and foaming temperatures, but Baumeister shows that these details are well within the purview of those of ordinary skill in the art. Baumeister discloses that the titanium hydride blowing agent with aluminum alloy powders is conventional in the prior art (e.g. see Examples 1-7) and also discloses typical foaming temperatures for various metal powder and blowing agent mixtures. In view of Baumeister, the use of a mixture of aluminum alloy powder with a titanium hydride blowing agent would have been obvious to one of ordinary skill in the art at the time the invention was made for the metal foam composite of Seeliger because Baumeister supplies details on making metal foam compositions and their processing temperatures that Seeliger omits. Seeliger discloses that his metal foam composite can be used for car body panels in providing crash protection (e.g. see column 4, lines 31-44), but may not disclose the use of superplastic forming for the sheet metal

Art Unit: 1775

in the panels. Rashid, however, discloses that car body panels made with sheet metal can be made more easily using superplastically formable metal materials (e.g. see column 1, first paragraph) and quick plastic forming processes (e.g. see column 1, lines 5-12). Processing steps, forming steps and conditions are disclosed by Rashid (e.g. see claims 1-14). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use superplastically formable metal materials for the car body panels of Seeliger because Rashid discloses that superplastically formable materials have processing advantages over in car body panel manufacture if complex shapes are needed.

Response to Arguments

7. Applicant's arguments filed June 22, 2005 have been fully considered but they are not persuasive.

8. Applicant argues that there is no motivation or teachings that super or quick plastic formation is even possible with the addition of a metal foam precursor coupled to a sheet metal and within the mold. Applicant also argues that Rashid teaches that very specific equipment and materials are needed to obtain superplastic deformation and there is clearly no teaching that the formation of a metal foam is desirable or even possible with this material equipment. The examiner notes, however, Rashid clearly discloses advantages of using superplastically formable and quick plastically formable materials and processes for car body panel manufacture and therefore there is clear motivation to use such processes and materials for making the car body panels envisioned by Seeliger. While Rashid's equipment and processes are specific, nothing in

Art Unit: 1775

the teachings of Rashid preclude the use of his process with precursor foam core panels and the potential advantages of Rashid's process would clearly outweigh reservations. Obviousness does not require absolute predictability of success; instead, all that is required is there be a reasonable expectation of success. *In re O'Farrell*, 7 USPQ2d 1673, 1681 (Fed. Cir. 1988). It should also be noted that a review of applicant's own disclosure shows no disclosed unobvious modifications which were necessary, and no unforeseen problems occurred, when using superplastic or quick plastic forming materials and processes with precursor foam core composites. Contrary to applicant's arguments, there is no disclosed art recognized aversion to using superplastic or quick plastic processes with precursor foam core composites and it appears that, in indeed, such processes actually appear to require no unobvious modification when used with such composites.

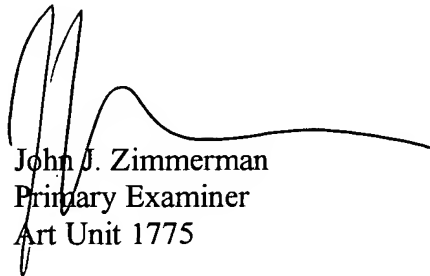
9. In view of the new rejection of the claims under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-18 of copending Application No. 10/738,345, this Second Office Action has not been made Final.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John J. Zimmerman whose telephone number is (571) 272-1547. The examiner can normally be reached on 8:30am-5:00pm, M-F. Supervisor Deborah Jones can be reached on (571) 272-1535. The fax phone number for the organization where this application or proceeding is assigned is (571)-273-8300.

Art Unit: 1775

11. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



John J. Zimmerman
Primary Examiner
Art Unit 1775

jjz
September 19, 2005